WHAT IS CLAIMED IS:

1. A method for restricting a reverse call in a base station, comprising the steps of:

(a) calculating a noise power of the base station;

(b) measuring a total receiving power of the base station;

(c) calculating a cell loading factor of the base station using a ratio of the noise power to the total receiving power;

(d) comparing the calculated cell loading factor of the base station with a predetermined threshold for call restriction; and,

(e) restricting an incoming call to the base station according to the comparison result.

2. The method as claimed in Claim 1, wherein the step (a) of calculating the noise power of the base station comprises the steps of:

(i) measuring the receiving power of the base station when there is no call for a predetermined time in the base station; and

(ii) determining the measured receiving power of the base station as the noise power of the base station.

3. The method as claimed in Claim 2, wherein the step (a) of calculating the noise power comprises the steps of:

(1) measuring a receiving attenuation value $A_{i,full}$ and a receiving power $P_{i,full}$ of the base station in a full blossom state so that the reverse service area of the base station becomes maximum;

(2) measuring a receiving attenuation value $A_{i,part}$ and a receiving power $P_{i,part}$ of the base station in a partial blossom state so that the reverse service area of the base station is substantially less than that the full blossom state; and,

(3) calculating the noise power of the base station using the receiving attenuation value and the receiving power of the base station measured in the full blossom state in step (1) and the partial blossom state in step (2).

4. The method as claimed in Claim 3, wherein the step (1) of measuring the receiving attenuation value and the receiving power of the base station in the full blossom state comprises the steps of:

ordering a transceiver interfacing processor (TIP) of the base station to enter the full blossom state;

in response to the order to enter the full state, decreasing the receiving attenuation value in the transceiver interfacing processor (TIP) at an increment to minimize an interference with an adjacent base station, and entering the full blossom state to receive a final attenuation value;

upon receiving the final attenuation value, ordering the transceiver interfacing processor (TIP) to repeatedly measure the receiving power of the base station at specified

times;

receiving the measured receiving power values of the base station from the transceiver interfacing processor (TIP); and,

calculating an average of the received receiving power values of the base station.

5. The method as claimed in Claim 4, wherein the step (1) of measuring the receiving attenuation value and the receiving power of the base station in the full blossom state further comprising the steps of:

rejecting the measured receiving attenuation value and the receiving power of the base station and providing the transceiver interfacing processor (TIP) with a re-measurement order if a new call is generated in the base station or if the measured receiving power of the base station is changed after setting the receiving attenuation value in the base station.

6. The method as claimed in Claim 3, wherein the step (2) of measuring the receiving attenuation value and the receiving power of the base station in the partial blossom state comprises the steps of:

ordering a transceiver interfacing processor (TIP) of the base station to enter the partial blossom state;

in response to the order to enter the partial blossom state, increasing the receiving attenuation value in the transceiver interfacing processor (TIP) at an increment to minimize interference with an adjacent base station, and entering the partial blossom state to receive a

final attenuation value;

upon receiving the final attenuation value, ordering the transceiver interfacing processor (TIP) to repeatedly measure the receiving power of the base station at specified times;

receiving the measured receiving power values of the base station from the transceiver interfacing processor (TIP); and,

calculating an average of the received receiving power values of the base station.

7. The method as claimed in Claim 6, wherein the step of measuring the receiving attenuation value and the receiving power of the base station in the partial blossom state further comprising the steps of:

rejecting the measured receiving attenuation value and the receiving power of the base station and providing the transceiver interfacing processor (TIP) with a re-measurement order if a new call is generated in the base station or if the measured receiving power of the base station is changed after setting the receiving attenuation value in the base station.

8. The method as claimed in Claim 5, wherein the receiving attenuation value and the receiving power of the base station measured in the full blossom state are defined by the following equation:

$N_i = N_{i,front} + A_{i,inject} \times N_{i,inject},$

wherein the N_i represents the noise power of the base station for an i-th receiving

path; the $N_{i,front}$ represents the receiving power of a signal received at the base station before the receiving attenuation value is set at the base station; the $N_{i,inject}$ represents the receiving power of the signal received at the base station after the receiving attenuation value is set at the base station; and, the $A_{i,inject}$ represents the receiving attenuation value set in an i-th receiving path of the base station; and,

wherein an average (N_{T1})of the noise power calculated in all receiving path for the noise power (N_i)of the i-th receiving path of the base station is determined as the noise power of the base station.

9. The method as claimed in Claim 8, wherein the receiving power $N_{i,front}$ of the signal received at the base station before the receiving attenuation value is set at the base station is defined as the following equation:

$$N_{i,front} = \frac{A_{i,full} \times P_{i,part} - A_{i,part} \times P_{i,full}}{A_{i,full} - A_{i,part}},$$

wherein the $A_{i,full}$ represents the receiving attenuation value and the $P_{i,full}$ represents the receiving power of the base station in a full blossom state; and,

wherein the $A_{i,part}$ represents the receiving attenuation value and the $P_{i,part}$ represents the receiving power $P_{i,part}$ of the base station in a partial blossom state.

10. The method as claimed in Claim 9, wherein the receiving power $N_{i,inject}$ of the signal received at the base station after the receiving attenuation value is set at the base station is defined as the following equation:

$$N_{i,inject} = \frac{P_{i,full} - P_{i,part}}{A_{i,full} - A_{i,part}}.$$

wherein the $A_{i,full}$ represents the receiving attenuation value and the $P_{i,full}$ represents the receiving power of the base station in a full blossom state; and,

wherein the $A_{i,part}$ represents the receiving attenuation value and the $P_{i,part}$ represents the receiving power $P_{i,part}$ of the base station in a partial blossom state.

11. The method as claimed in Claim 10, wherein the total receiving power of the base station is defined as:

$P_{RX1}=A_{i,inject} + A_i + P_{RSSI},$

wherein the P_{RX1} represents the total receiving power of the base station; the $A_{i,inject}$ represents the receiving attenuation value set in an i-th receiving path of the base station; the A_i represents a loss generated in the receiving path of the base station; and, the P_{RSSI} represents the receiving power of the base station.

12. The method as claimed in Claim 1, wherein the cell loading factor of the base station is defined as:

$$\text{Cell Loading Factor} = 1 - \frac{N_T}{P_{RX}},$$

wherein the N_T represents the noise power of the base station, and the P_{RX} represents the total receiving power of the base station.

13. The method as claimed in Claim 12, wherein the step (e) of restricting an

incoming call to the base station comprises the steps of:

(1) determining whether the cell loading factor of the base station is lower than a first threshold value;

(1)(i) if the cell loading factor of the base station is lower than the first threshold value, allowing both a new call and a handoff call; and,

(1)(ii)if the cell loading factor of the base station is not lower than the first threshold; and,

(2) determining whether the cell loading factor of the base station is lower than a second threshold value;

(2)(i) if the cell loading factor of the base station is lower than the second threshold value, allowing the handoff call and restricting the new call; and,

(2)(ii) if the cell loading factor of the base station is equal to or greater than the second threshold value, restricting both the new call and the handoff call.

14. The method as claimed in Claim 13, the reverse call restriction is performed on a sub-cell unit basis.

15. The method as claimed in Claim 2, wherein the step(1) of calculating the noise power of the base station comprises the steps of:

ordering the transceiver interfacing processor to repeatedly measure the receiving power of the base station at specified times if there is no call for a predetermined time in the base station;

receiving the receiving power values from the transceiver interfacing processor (TIP); and,

calculating an average of the receiving power values received from the transceiver interfacing processor (TIP).

16. The method as claimed in Claim 15, wherein the step(1) of calculating the noise power of the base station further comprising the steps of:

rejecting the measured receiving attenuation value and the receiving power of the base station and providing the transceiver interfacing processor (TIP) with a re-measurement order if a new call is generated in the base station or if the measured receiving power of the base station is changed after setting the receiving attenuation value in the base station.

17. The method as claimed in Claim 16, wherein the receiving power of the base station received when a call is incoming to the base station is determined as the total receiving power of the base station.

18. The method as claimed in Claim 16, wherein the cell loading factor of the base station is defined as:

$$\text{Cell Loading Factor} = 1 - \frac{N_T}{P_{RX}},$$

wherein the N_T represents the noise power of the base station, and the P_{RX}

represents the total receiving power of the base station.

19. The method as claimed in Claim 18, wherein the step (e) of restricting an incoming call to the base station comprises the steps of:

(1) determining whether the cell loading factor of the base station is lower than a first threshold value;

(1)(i) if the cell loading factor of the base station is lower than the first threshold value, allowing both a new call and a handoff call; and,

(1)(ii) if the cell loading factor of the base station is not lower than the first threshold; and,

(2) determining whether the cell loading factor of the base station is lower than a second threshold value;

(2)(i) if the cell loading factor of the base station is lower than the second threshold value, allowing the handoff call and restricting the new call; and,

(2)(ii) if the cell loading factor of the base station is equal to or greater than the second threshold value, restricting both the new call and the handoff call.

20. The method as claimed in Claim 19, the reverse call restriction is performed on a sub-cell unit basis.